



Configuration Utility Notes VICTRON SMART LITHIUM BATTERY With Victron VE Bus BMS

Developed in conjunction with the Victron Energy engineering team, these instructions and the accompanying wiring diagram represent a “best practice” approach to charging Victron’s Smart Lithium LiFePO4 batteries.



Required Components:

- WS500 Alternator Regulator – **Updated to the current firmware revision (2.4.2)** and configured with the Victron Smart Lithium/Lynx BMS charging profile
- WS500 Wiring Harness, such as the WS500/PH or WS500/NH

In systems where Victron’s Smart Lithium batteries are being managed by the VE Bus BMS, the regulator will monitor system voltage, ambient battery temperature and current into and out of the batteries. By closely monitoring battery temperature and the charge rate into the batteries, the WS500 can charge more safely by staying within the the Smart Lithium battery’s recommended C-rate and working temperature range. The Feature In wire is used to discontinue charging if the BMS activates its Charge Disconnect circuit.

When installing the configuration profile for your batteries, be sure to set the proper battery capacity multiplier to ensure that the regulator will be able to accurately monitor charging based on the overall capacity of the batteries being charged. See the Configuration Utility User’s Guide for instructions when modifying the configuration profile.

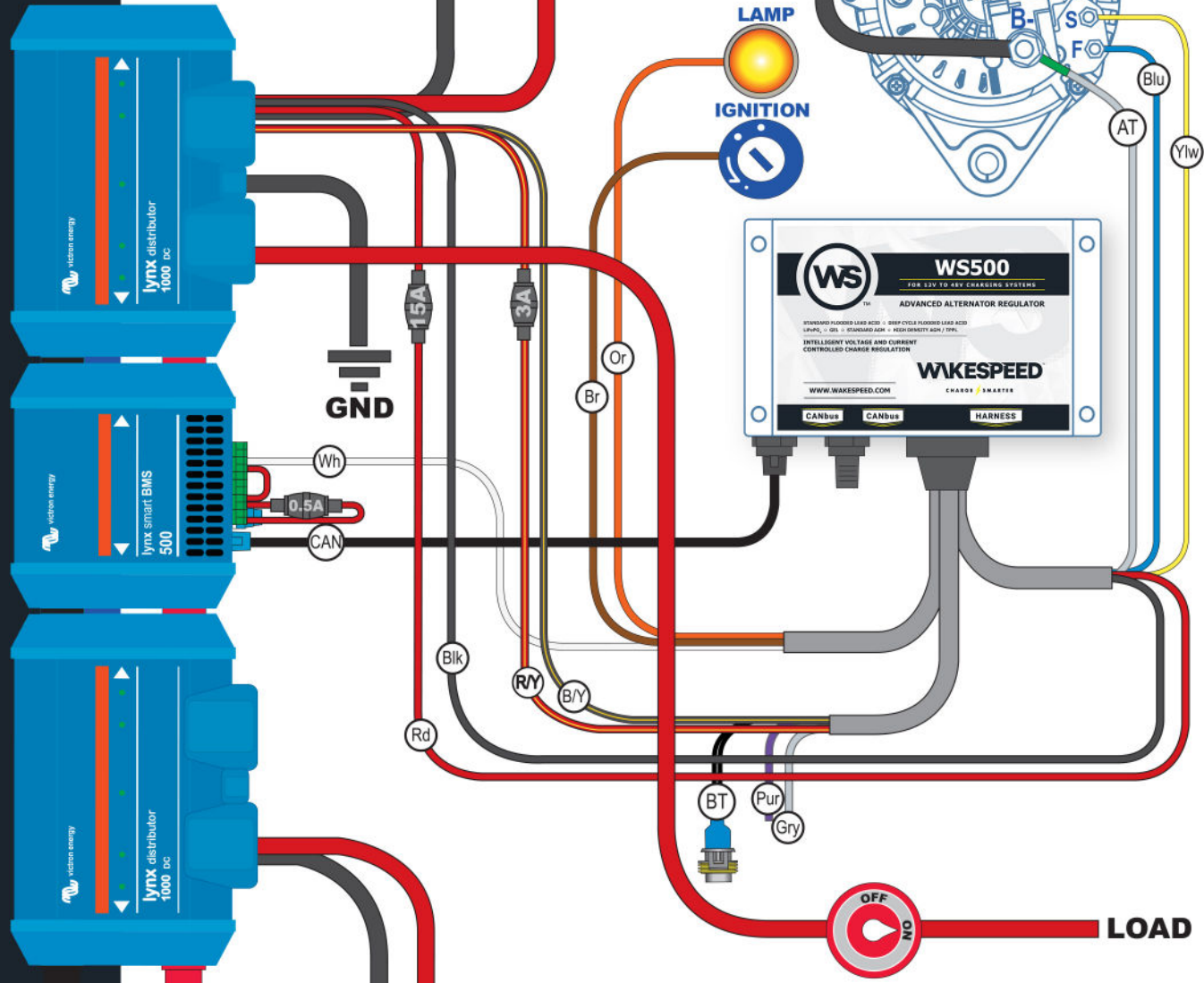
In order to safely monitor charging voltage, the regulator’s power and voltage sense wires (red and red/yellow tracer) must be connected in a location that’s always on alternator side of any switches or fuses.

NOTE: When connecting the WS500 regulator to the Victron system, a crossover cable is required. A pre-made cable is available from Wakespeed. A custom cable can also be created with RJ45 connectors providing the proper pinout locations for both systems.

Wakespeed’s WS500 Communication and Programming guide (available on the Technical Page of the Wakespeed website provides description and images indicating proper pinout for the WS500. Pinouts for the Victron Energy CAN connectors are available on the Victron website.

When installing data terminators, only use the Wakespeed terminator (WS500-DT-K) on the WS500 and use only a Victron data terminator on Victron components.

IMPORTANT: The information is provided for reference, and is intended to provide guidance required to tailor the configuration profile to your system. Please refer to the Wakespeed Communications and Configuration Guide and Configuration Utility Users Guide for detailed configuration instructions.



- (B+) Alternator Positive Output Cable
- (B-) Alternator Ground Cable
- (CAN) WS to VE CANbus Crossover Cable
- (Wh) Feature In Wire (Charge Disconnect)
- (Or) Dash Lamp
- (Br) Ignition (Regulator ON/OFF)
- (Rd) Regulator Power (Positive)
- (Blk) Regulator Power (Ground)
- (Blu) Alternator Field Excite
- (Ylw) Alternator Stator
- (R/Y) Voltage Sense (Positive)
- (B/Y) Voltage Sense (Ground)
- (Pur) Current Sense (High) *Not Used*
- (Gry) Current Sense (Low) *Not Used*
- (AT) Alternator Temperature Sensor
- (BT) Battery Temperature Sensor *Not Used*